THE PEACE CORPS VOL VIII NOS 9-10 SEPT-OCT 1970

Volunteer

Peace Corps
and
the cities

Volunteer

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Cover
"The city in the developing world is both refuge and magnet," writes John Osborn in this month's lead article, as the *Volunteer* examines the world-wide movement of people to cities, and Peace Corps approaches to the problem.

6 There Will Be One Billion People Living in Cities of the Developing World by 1980
by John Osborn
In Asia, Africa and Latin America, people are flocking into towns and cities in unprecedented numbers. What implications does this trend hold for rural development? How do Peace Corps officials currently view city development projects? What are Peace Corps Volunteers doing in the city today?

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Peace Corps
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John Osborn, Editor
Don DeMarino, Associate Editor

What in the world are you doing?

Why? To what end?

How are you doing it?

How are you succeeding? How are you failing? What are you learning?

What do those around you think? How do they live? How do you live? How does it feel?

The *Volunteer* is a journal of volunteer development established to examine and discuss the work of the Peace Corps community in all its dimensions.

We welcome contributions and suggestions on all subjects from active and former Volunteers, from staff members, from host country officials and co-workers, from experts in fields related to Volunteer projects. Choose your own medium: articles, poetry, photographs.

We try to stay loose. But we also try to plan ahead.

Here are some of the topics we will examine in the coming months.

**February: The Returned Volunteer*

What is he doing today?

How does he feel about his Peace Corps experience? How did it influence him?

What are active returned Volunteer organizations doing?

Interviews with several typical and atypical returnees. A look at current services available through the Peace Corps Office of Returned Volunteer Services.

Deadline for contributions: January 15.

**March: Ecology*

What is the "environmental crisis?"

Does it have any meaning for developing countries?

In what environmental projects is the Peace Corps currently involved?

What is the potential environmental impact of other current Peace Corps programs in agriculture, health and education?

Case studies.

Bibliography.

Deadline for contributions: February 1.

We hope you will join us in these discussions.

The magazine, however, is open at all times to any suggestions or articles, regardless of their relevance to any particular theme.

Write your in-country correspondent, or:

John Osborn, Editor
Volunteer
Room 622
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USA

To the Volunteer,

Re: Tanzania, Somalia.

I just received my March-April *Volunteer* today (June 1) and was surprised to see so much emphasis placed on the fact that Tanzania and Somalia are no longer recruiting Peace Corps Volunteers.

Whenever Peace Corps goes into a country it does so at the request of the host country. Since we serve at their request, we go when they feel we should, not necessarily when in our judgment we feel they can get along without us. Let's give them credit for knowing what is in their best interest.

If Peace Corps claims to be helping countries toward more political and economic independence, why should its ego be hurt when a host country government acts independently?

If a host country doesn't recognize that the Peace Corps is "God's Gift," then for that country we aren't.

John Shebek
Former Volunteer
Riverside, Iowa

To The Volunteer:

We found your January-February issue unusually relevant and interesting in its discussion of the factors which affect early departures and extensions. It was a pleasant departure from your normal format of romantic pictures of idyllic placements and unreal verbal descriptions of a kind of Peace Corps service which neither we nor any friends have ever experienced.

We want to suggest a topic for a new issue: the withdrawal of Peace Corps from Tanzania, Libya, Somalia, and the present disruptions in Ethiopia and Turkey, which will undoubtedly lead to withdrawal there in the near future. It is curious and revealing that the *Volunteer* magazine has so thoroughly neglected this very important issue. Is there some reason to quietly continue as if nothing is happening? Who benefits from covering up such stories? We Volunteers find ourselves alienated and our morale suffers greatly when we receive letters from friends in other programs describing the disintegration of Peace Corps in these countries while all official literature maintains an idealized picture of the situation. We who have served in Turkey and Somalia and now find ourselves in the Eastern Caribbean program are struck by the lack of understanding and knowledge of local Volunteers about programs abroad. Your newsletter should be the vehicle to educate Volunteers to the international aspects and implications of Peace Corps so that we can all transcend our individual placements.

We are particularly curious as to the support that has been made available to Volunteers undergoing these withdrawals. What kind of public statements have been made to the U.S. public and to the host country nationals in explanation of the Peace Corps program and its withdrawal? We feel that it is not enough for Volunteers to be quietly shipped out and absorbed into other programs; such behavior appears to be an acceptance of guilt. What is being done to re-direct the misplaced animosity (accusations of CIA connections, Peace Corps imperialism, racial-religious paternalism and evangelism), to more creative channels of social change in these countries? What is being done to define more clearly the true goals and identity of Volunteers and to combat the irresponsible stereotyping of our efforts due to our nationality, color, and often our religion (or lack of it). These are the very barriers we set out to overcome in the original conception of the Peace Corps; now we are retreating in the face of these barriers, apparently passively. If we keep it quiet, do we think it will fade away?

Larry and Lois Marks
Carriacou, Eastern Caribbean Islands

To The Volunteer:

In a recent *Newsweek* article the Peace Corps in Africa was described as being in a struggle for survival. If the struggle ends in the total withdrawal of the Peace Corps from the continent, it will be a loss for both sides. Africa needs aid which is inexpensive—both politically and fiscally—and that is supposedly what the Peace Corps offers. This country also needs contact between its people and the people of Africa. Since African governments continue to request Volunteers from countries such as West Germany and Israel, it seems that the difficulty lies in our ability to furnish the

kind of skilled, experienced people that the Africans want. Hopefully if length of service, allowances, vehicle policy and other aspects of volunteer life were changed, people who now feel they could not afford to give up their jobs would be happy to join.

Someone ought to find out how the West Germans, and others do it. If it turns out that providing incentives doesn't bring the people, then it would appear that we have the problem that many thought we had when the Peace Corps began: that Americans are not willing to leave their comforts and pleasures for the intangible rewards of service overseas. From my own experience I doubt that this is true. I live in a very rural, very white midwestern town and I have spoken and shown slides and movies to all sorts of organizations. I have found that people have been much more interested in Africa, particularly in the life of the people, than I had expected. If a way can be found to convert this interest into service, these farmers, mechanics and nurses might save the Peace Corps in Africa.

When our group (Uganda 1) terminated in December, 1966, several volunteers were highly critical of our program. We had been sent to teach in twenty-five new or upgraded secondary schools. One very strong argument against the project was that these schools were largely academic, producing an intellectual elite in a country which still had to deal with malnutrition and almost universal illness. They were right; the schools were too academic. But the Ministry of Education was aware of this and was attempting to provide, if too slowly, a vocational-trade basis for each school. Eventually, for example, it was hoped that all of the course material in our school would have an agricultural bias.

A few weeks ago our headmaster sent me a list of the positions currently held by our first graduates. Out of thirty-five, five are in higher school (continued academic education), five are in agricultural training, three are training for some sort of health work, six are either teaching or in teacher training, five are working for the government, two are in technical school, four are in business, and three are in the police—a wide assortment of useful activities. The fact is that without the Peace Corps teachers in Uganda the government could not have afforded to open these schools and these people and about one thousand others from that year alone would not be preparing for any of these jobs.

In this day and age, anyone who defends U.S. government efforts invites the wrath of many people including, in this case, many returned Volunteers. But despite its failings and potential for misunderstanding and even outright harm I think it will be a sad day in Africa and America when the Peace Corps folds its tent.

Arthur Moore
Former Volunteer
Fort Laramie, Ohio

To The Volunteer:

In the March-April issue of the *Volunteer,* Tom Smoyer said in his article on Somalia, "I believe that if the hopes and aspirations of the Somali people are to be realized they must be realized by themselves."

Like the Somali Volunteers, many of us English-teaching Volunteers in Turkey were recently expelled due to host country unrest. The educated opinion of those who know the Turkish situation is in the same vein as Tom Smoyer's: the Turks should be left alone to go their own way, without the express "help" of foreigners.

The Turks are supersensitive to foreign participation within their institutions; they're wary, distrustful, fearful. They are afraid that the foreigner, in his good natured effort to change things and improve them, will supplant the Turkish way with his foreign way.

The question becomes, "Are the Somalia and Turkey situations similar, and are there other host country situations which are similar?"

Perhaps in some countries, where fear of the foreigner runs high, emphasis should not be to help, to improve, but merely to learn and appreciate. The Volunteer should focus on doing his assigned job, doing it with the same attitude as his national co-workers. Do it with the intention of experiencing the working system, not standing out as the champion of improvement and change. Perhaps in some countries the best that can be hoped for is a low-key exchange of cultural differences, an enlightening experience for the host country national and a broadening one for the Volunteer.

Mark Brady
Former Volunteer
Edgartown, Mass.

To The Volunteer:

The Bureau of the Budget denied Peace Corps Director Joseph Blatchford's request for an increase in the readjustment allowance because (as you report) ". . . such an increase . . . at this time would be inconsistent with President Nixon's attempts to curb inflation and reduce government spending."

Assuming that the extra tax money budgeted for the increased allowance is not used for other purposes, such reasoning appears, at best, to be political obfuscation; at worst, it implies error in the Bureau's economic reasoning.

If no change were enacted regarding the absolute amount of readjustment pay a Volunteer could 'send home' (for payment of college debts, family hardship, etc.), increasing the allowance actually would be anti-inflationary, because the extra dollars, taxed from current national income, could not be used until the Volunteer had terminated sometime in the future. The result would be a net decrease in current government and consumer spending.

Thus, an increase in the readjustment allowance would not only help the RPCV of the future, it would also contribute, due to its nature as a form of compulsory savings, to a reduction of current inflationary pressures in the United States, while providing a deferred stimulant to future economic growth.

J. Peter Marion
Tontonicapan, Guatemala

To The Volunteer:

Superslick graphics are bad.

Kevin Simmons
Sangli, India

There will be one billion people living in the cities of the developing world by nineteen eighty

by John Osborn

At Sealdah Station, Calcutta, misery radiates outward . . . dusty streets straggle away in every direction lined with tiny shacks built of metal scraps, pieces of old baskets, strips of wood, and gunny-sacks. In the dark interiors of the shacks, small fires glow through the smoke, and dark faces gaze out at children playing in the urinous-smelling, fly-infested streets. In a few years the children who survive . . . will grow taller and thinner and stand in the streets like ragged skeletons, barefoot, hollow-eyed, blinking their apathetic stares out of grey, dusty faces . . . Calcutta today . . . swollen by millions of refugees until the streets are spotted with their sleeping bodies . . . may very well represent the city of the future.
—Philip Appleman, in
The Silent Explosion.

The shadow of Calcutta falls across the developing world today, a hint of things to come in countries still struggling to master rural malnutrition, disease, and poverty.

For like most developing nations, India is a rural land bedeviled by rural problems. Seventy per cent of her 500 million people live in traditional villages, farming subsistence crops and following the customs of an ancient culture.

And yet, 54 million Indians live in cities with populations greater than 100,000, a growing urban mass equal to the total population of France, West Germany, or Great Britain alone. India may be a land of bullock carts, curry and holy men, but today it is also a land of sprawling cities—Calcutta, Bombay, Madras, New Delhi, Hyderabad —whose size and complexity rival those of Europe or North America.

The rapid growth of Calcutta is an extreme example of a new worldwide trend of unprecedented dimensions. It is a trend which has produced new challenges for the Peace Corps.

From Colombia to the Congo, from Morocco to Malaysia, people are leaving the countryside for towns and cities driven from their traditional homes by rural poverty or social and political change, and drawn by the promise of something better (see box, pg.8).

Since 1950, the towns and cities of Latin America, Asia, and Africa have been growing at least twice as fast as the general population which surrounds them, according to recent United Nations statistics. Given this present rate of growth, there will be one billion people—25 per cent of the total world population —pressed into the urban areas of the developing world by 1980.

Clearly, urbanization is a new factor in the evolving social, political, and economic fabric of the developing world. And it is an important one.

Great Promise; Great Danger

As potential centers of change the new cities of the developing world hold great promise. It is here that new national governments will grow and establish their rule. It is here that industry and commerce can best succeed. And it is here that new democratic institutions can best develop, freed from the constraints of traditional society.

But these cities are also fraught with danger. Their growth is already outstripping agricultural and industrial growth in some countries. And many are quickly becoming unmanageable, unable to keep up with a growing demand for more jobs, clean water, food, intra-city transport, housing, health care, education, waste disposal, or electricity.

More ominous are the pressures, which cities exert on the people who come to them, fragmenting families, generating crime and delinquency, without offering any new vision of human community to replace the traditional one which it now threatens.

In an important sense, cities are the key to rural development. So much of the work being done to improve agriculture, to extend health care and education, and to distribute the goods of modern life depend upon their administrative and mechanical facilities. Should they fail, for whatever reason, their failure could destroy all recent progress in these fields.

So far, the West has been notably ineffective in solving many of its own city problems. In the minds of some, Calcutta and New York are urban failures of equal note.

As one reads through the monographs and reports of academic urbanologists in the West one finds an almost obsessive interest in definitions, mixed with calls for yet more research. Few practical solutions are offered.

Practical development organizations, on the other hand, have tended to ignore the phenomenon of city growth. Given the magnitude of rural poverty, cities have been left to take care of themselves.

For the Peace Corps, the issue is clouded by past failures in Latin America, and by a rural bias inside the agency. Early in its history, the Peace Corps decided it could be of greatest benefit by working in programs to extend modern services and techniques to rural areas of the developing world. With the agency's new emphasis on skills, however, this is changing.

In July, the Peace Corps held an urban conference to discuss the world wide dimensions of urbanization, and the ways in which Peace Corps Volunteers might be able to help.

The conference was the first of its kind. It was attended by Volunteers and staff members with experience in urban development work, along with several American and foreign specialists, notably John Turner of the Massachusetts Institute of Technology, Alfred Van Huyck, a former Ford Foundation Adviser to Calcutta, and Vergilio Barco, former Mayor of Bogota, Colombia.

The conference lasted two days and the participants covered many issues, debating the relative merits of urban community development projects and municipal government assignments, and reviving once again the generalist versus

Why?

In the West and other economically advanced areas, city growth has been associated with increased division of labor, specialization, technological advances and great increases in agricultural and material productivity.

But urbanization in the post-war developing world is not the result of the same factors.

As Philip Hauser points out in UNESCO's *Handbook for Social Research in Urban Areas:* "Although urbanization in Asia, Latin America and Africa does undoubtedly . . . result from and contribute to increased productivity, it represents more the transfer of underemployment and poverty from the over-populated rural countryside to the urban setting."

One does not have to look far for evidence to support that hypothesis.

The traditional village, a social unit which has endured in many parts of the world since neolithic times, is under great pressure today.

The populations of developing countries are rising steadily and geometrically, and as they do so, the amount of land available for cultivation per family declines. Much of this land is already badly depleted by centuries of careless or intensive cultivation, making it less able to support more people than it does now.

In some areas, such as Pakistan, India and the Philippines, agricultural productivity is also rising, the result of newly introduced methods of cultivation and high yield "miracle" crops, a development which threatens to displace millions of marginal farmers as rich landlords move to consolidate their holdings.

War and Change

Village life has also been disrupted by war and political change. After the partition of India at the close of the Second World War, millions of Moslems fled north to Pakistan, settling in vast refugee communities on the outskirts of Karachi, while equally large numbers of Hindus in East Pakistan fled south to Calcutta. The sudden influx of migrants to both cities contributes to their current depressed condition. And similar urban explosions are now taking place in Southeast Asia, in Thailand, Vietnam and Cambodia.

All of these developments are literally "pushing" millions of people into cities and towns, centers of hope for rural dwellers caught in a world that seems increasingly hopeless.

At the same time, however, there is a new acceptance of Western, urban values throughout the developing world, particularly our belief in the salvation of abundance and salaried status. And with this has come a demand for the benefits we enjoy: greater opportunity, freedom from disease, a better diet, a "modern" education, a "job," and the symbols and services of modern life—transistor radios, bicycles, electric lights, motor-scooters, movies, Western clothes, tin roofs, automobiles, paved streets, sanitary facilities, newspapers, books and magazines. By virtue of its present monopoly of such things, the city exerts a powerful attraction, one which is only magnified by the spread of national ideologies, advertising, newspapers, magazines and books.

A city, therefore, is both refuge *and* magnet, "pulling" the disadvantaged, the displaced, the talented, the bored, the young, the discontented from their villages, even as the environments of those villages push them from their traditional, country pursuits.

Camps of Faithful

Obviously, then, cities are not mere "catchbasins" for those displaced by economic, political, environmental and social change. They are also camps of the faithful, come to worship a new way of life. And their appearance is as significant for the future of the developing world as was the appearance of towns and industrial centers for the future of Europe in the eighteenth century.

And obviously there is a clear relationship between rural development and urbanization which agencies like the Peace Corps must consider carefully in the critical months ahead.

professional debate.

The conferees reached no clear conclusions, but did reach a consensus on certain questions.

While the conferees did not advocate a clear strategy for Peace Corps involvement in city development, they did agree that such involvement is possible and necessary.

They were clearly uneasy about urban community development, and felt that in the future the Peace Corps must help strengthen and modernize existing government agencies, rather than attempt to subvert or alter their basic structure or policies, which they felt usually does more harm than good. And, in any case, they said, policies can only be altered by informed, perceptive, professional Volunteers willing to work closely with their counterparts in well defined jobs.

No Ready Answers

The conferees also felt that Volunteers in city jobs must be open-minded, prepared to help countries move *towards* solutions appropriate to their own needs. Given the current urban crisis in the United States, it would be unwise, they felt, to preach solutions which have yet to be vindicated here.

Finally, some conferees felt the Peace Corps could contribute to city development by working to stem the flow of rural migrants, by helping to revitalize rural village life through educational television and radio projects, through handicraft development, through support for departments working to extend education, health, and commercial services to the village.

Such conclusions are supported by Bruce McCartney, an urban specialist recently appointed to advise the Peace Corps on future involvement in urban development projects.

McCartney, who has served with urban planning groups in both Calcutta and New York City, feels that the greatest impediment to city development in the developing countries is the lack of "lower" and "middle" level workers trained to execute plans and policies already approved by their governments.

Speaking with the *Volunteer* magazine in late October, McCartney said he saw a place for Volunteers in existing urban departments. Most of these departments simply do not have the capacity to administer existing government programs, he said. And if Volunteers could help train people in these departments they would, said McCartney, be performing a great service.

But like many others, McCartney does not think the Peace Corps has many clear answers to offer developing countries. We can share our information and techniques, he says, but in the end, the developing countries must be allowed to decide what to use and how to use it without outside pressure.

"We need to get away from the donor-recipient approach of past aid efforts," he said. "Too often governments ask for our help expecting us to give them the answers.

"But," he added, "I am convinced there are no simple technical solutions to any of the problems these countries are facing. Most of the decisions that have to be made are judgmental, based on social and political realities that outside experts rarely understand."

At present, approximately 400 Volunteers work in strict city programs, programs designed to help urban areas cope with current problems of overcrowding, unemployment, congestion, social disorder, shortages of domestic and public buildings, or over-taxed and under-trained administrations.

Out of a total Volunteer force of 8,000, that is a small number indeed. But McCartney estimates the number is probably the largest of any government or private agency offering development assistance today.

Current Volunteer assignments range from government agencies, to posts which place them in direct contact with the urban poor.

For example, since 1966, the Peace Corps has been sending Volunteers with backgrounds in law, city planning, architecture, public administration, civil engineering and economics to Venezuela to help improve the administrative capacity of municipal governments there.

Working under the supervision of two Venezuelan municipal development agencies, Volunteers have helped create local planning offices, establish *cadastre* systems—a first step in any attempt to inact equitable property taxes—write budgets, introduce accounting systems, negotiate development loans, organize garbage services, and draw plans for low-cost housing and public buildings.

The program has been so successful, the Peace Corps says, that this year trained Venezuelans will replace Volunteers at several of the 40 posts where they have been working.

Malaysia Accountants

A similar program is now underway in Malaysia. There, the central government recently adapted a "modern budget system," similar to that used by the United States Government today. The system was introduced with the assistance of the Ford Foundation and the

Harvard University Development Advisory Service, and will, if all goes according to plan, be in use in all departments of the Malaysian Government by 1975.

But before this can happen, the *accounting system* of each department must be reorganized to match the information requirements of the budget system. And this means the Malaysian Government accountants, who have been following British bookkeeping methods since independence, must be retrained.

To this end, 13 Volunteer accountants have been working in Malaysian ministries for the past year under the guidance of the Malaysian Treasury, helping some of these departments convert to modern accounting systems. There is a request for more such Volunteers for 1971, and in the minds of many in Washington, the program serves as a model for future Peace Corps assistance to governments attempting to modernize and implement new plans.

Both the Venezuelan and Malaysian programs are designed to strengthen existing government institutions and help them get on with their work.

But the Peace Corps is also involved at so-called "lower" levels.

Guinea Mechanics

In Guinea, for example, on the coast of West Africa, 22 Volunteer mechanics have been working for more than a year in the machine shops of that country's Ministry of Public Works, helping put the Conakry Bus Service back on the road again, while training Guinean mechanics in maintenance and service procedures which will enable them to assume full responsibility for the vehicles in a matter of months.

Nearby, in Senegal, a group of young female social workers is busy in several towns, helping to teach basic nutritional information to Senegalese mothers through community centers, as well as conducting adult literacy and kindergarten classes.

Unlike the previous programs, this one is directed towards the people of smaller towns in an attempt to make them more attractive places of residence for those inclined to head further into the already over crowded capital of Dakar.

Similar in concept is an Ivory Coast housing project, which has placed Volunteer architects and engineers in towns to help supervise the modernization of private housing and public buildings.

Finally, the Peace Corps is reaching beyond cities and towns to villages in programs that could ultimately reduce migration from the countryside. Four agriculture Volunteers in Kenya, for example, are working with that country's Ministry of Social Services and Development to develop and preserve traditional crafts, a rural art now threatened by modern industry. And in Bolivia and Brazil, Volunteers are at work helping establish cooperative rural electric systems.

In spite of past disasters, there are small but successful urban community development projects in Panama, Brazil, Ethiopia, the Dominican Republic, and Colombia. Given Director Joseph Blatchford's own background in ACCION and given his statements on the subject in "new directions" proposals, it is likely there will be more.

Yet in spite of the promising city-related work in which Volunteers are now involved, many old, troublesome questions remain.

Will foreign governments tolerate the presence of American Volunteers in sensitive government posts?

Can a Volunteer function efficiently and helpfully in such an assignment?

Will trained and experienced Volunteers in nine-to-five city assignments be willing to master the spoken and behavioral languages of the countries in which they serve? Or will they drift into an easy expatriate existence as so many have done before them?

Such questions seem superficial given the magnitude of problems confronting the developing world today. But they are not. Because as the Peace Corps has learned over the years, it is not so much *what* one teaches, but *how* one teaches that counts, and in the long run, the dynamics of an encounter between teacher and taught are of an importance at least equal to the subject matter of the lesson.

In cities, perhaps more than anywhere else, it is important that the Peace Corps teach with the greatest reserve and sensitivity. For it is increasingly apparent that in our own rush to increase productivity and accumulate wealth in America, we ignored some important human factors. The results of this error are becoming increasingly unpleasant to contemplate: urban congestion, waste, environmental pollution, and human demoralization.

Though we may earnestly pray for a better life for the people of the developing world, certainly, we would not wish to condemn them to the same future that we now face.

In his book, *The Pentagon of Power*, Lewis Mumford, one of the first to study the rise of cities in the West, concludes:

Need Organic Picture

"Nothing less than a profound reorientation of our vaunted technological way of life will save this planet from becoming a lifeless desert. . . . If Man is to avoid self-extinction, he will consciously have to replace the mechanical world picture with a more inclusive organic and personal world picture.

"The God who saves us will not descend from the machine," he says, "he will arise once more in the human heart."

A related point was made by the Ceylon Ambassador to the United States in 1969. At a conference sponsored by the United States Department of Housing and Urban Development to examine "The American Urban Crisis through Asian Eyes," he said:

"The crisis of the cities confronts both the countries of the West and those of Asia. The West is endeavoring to overcome this crisis by the application of modern technology and economic principles. Asia, on the other hand, is relying largely on the strengthening of indigenous cultural patterns and spiritual values.

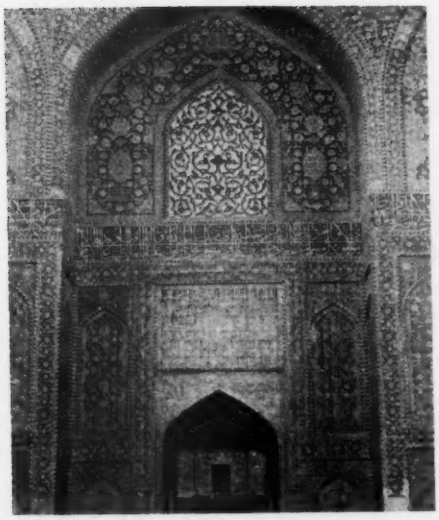
"Perhaps," the Ambassador suggested, "the solution lies in a combination of the two."

That remark suggests both an approach and a credo for future Peace Corps involvement in the city.

The United States has an expertise in technical matters that remains unsurpassed, backed by a long history of success and failure which allows us to judge its relative strengths and weaknesses. But in its village life and ancient rituals the developing world has preserved a knowledge and sympathy for the human heart that we would do well to study in our own search for a more humane society.

John Osborn is current editor of the Volunteer *magazine. He taught secondary school science and history for three years in Malawi prior to joining the staff in Washington. He has spent the rest of his life in American cities.*

Living in the city: the Iran Municipal Development Project



What assistance can the Peace Corps offer cities in the developing world?

That question has been around for a long time, and it has occasioned many answers. In its nine-year history, the Peace Corps has sent community development workers to the *barrios* of Ecuador, municipal managers to Venezuela, social workers to Senegal, architects to Tunisia, and accountants to Malaysia.

Large scale community development and education projects typified the agency's early urban programs. Now, urban projects are smaller, comprised of Volunteers with training or experience in specialized fields assigned directly to host country agencies.

Whether or not this approach will prove more useful than the earlier one is yet to be seen. But it is clearly an approach favored at the moment by both the countries asking for Peace Corps help and Washington.

One of the oldest of these "newer" city programs is a municipal development project in Iran. For the past three years, Volunteers with backgrounds in architecture, engineering, and city planning have been helping local government offices in that country cope with some of the problems generated by rapid urbanization.

Unlike other developing nations, however, Iran has an urban history of its own dating back thousands of years. Some of the first cities in human history appeared there as early as 4,000 B.C., and these provided the foundation for civilizations like Sumer and Persia which left such a distinctive cultural stamp on the states of the Near East. In later times, following the conquest of Islam in 635 A.D., Iranian cities contributed to the development and maintenance of overland trade routes which supplied luxury goods from the East to the growing mercantile states of medieval Europe.

In the past 20 years, Iran's cities have grown rapidly—like those of most other developing countries—due to a generally high rate of overall population growth, and the migration of large numbers of people from the countryside, in search of jobs and "modern" amenities.

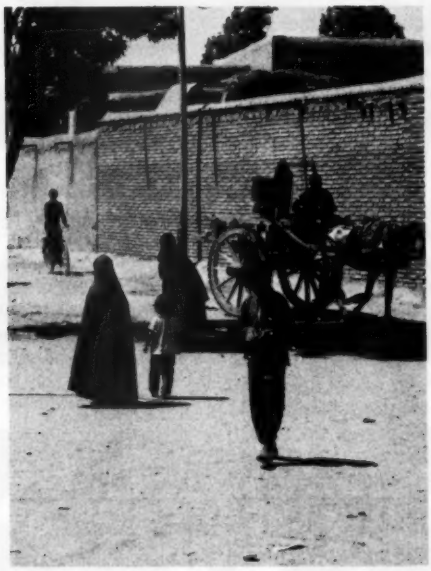
This growth has led to shortages in housing and transportation, and strained the services and facilities of city administrations. At the same time, motor vehicles have began to fill the narrow streets systems of Iran's ancient cities generating a new demand for widening and paving.

Volunteers in the municipal development program have been working for the Iran Ministry of the Interior in some of these areas. They have helped draw long-range city plans, and they have designed parks, government buildings, schools, and even mosques.

Their assignments, of course, have forced them to reside in urban settings, different in many ways from the country setting in which most Volunteers now work. But all of the elements of the classic Volunteer experience are there: the cultural and linguistic barriers; loneliness, bureaucratic redtape, illness, and the challenge of shaping Western ideas to serve the needs of a non-Western society.

There are currently 217 Volunteers in Iran. Of these, 32 are assigned to the municipal development program. In April, the *Volunteer* magazine invited them to write about their work. The contributions of five appear on the following pages. We hope they will encourage further discussion.

The kutchee, the highway, and the city in Iran



by Neil Hart

In Iran, to date, city planners have followed a crude formula: beginning in the 1930's, they systematically stamped on every city across the country a pattern of perpendicular streets and traffic circles, linking those cities to a growing national highway system like beads on a string.

Though simple, the plan served its purpose, easing movement between Iranian cities, towns, and villages, encouraging the growth of privately-owned bus and truck lines, opening an ancient land to the twentieth century.

But the plan, such as it was, also changed the *image* of the Persian city, introducing wide streets and circles to what had been, by tradition, an organic settlement, and triggering a debate which would have been unthinkable one hundred years ago.

What, people now ask, *is* a Persian city?

The answer, I think, lies not in its outwardly changing form, but in the Persian way of life.

I watched ten store fronts go up in Hamadan one summer, ten identical cubicles, four by six meters. "How dull," I thought, "repetitive units plastered white." Two days after their occupation, the cubicles had been individualized, brightened by the Persian flair for color and contrast, neon lights and eclectic displays.

The new street, on which the cubicles had been built, also sprang to life. Iranians love to walk, and the street, built with buses and trucks in mind, provided them with a place to stroll, a place to see and be seen. At promenade time, it pulsated.

Unquestionably, such new streets and blocks have become vital implements of Persian public and commercial life.

But Persians are also a private people, a fact we have so often ignored. They live *behind* the streets and circles, along back alleys they call *kutchees.* If you have lived in Iran, that word is an evocative one. Leave the straight new street, and walk the winding alleys, and you will find the private world of Persia. It is a quiet, neighborhood-centered world. Here lie the homes, hidden behind the high mud walls that line the *kutchees:* private sanctuaries; the containers of family life.

That world is the heart of the Persian city.

From afar, a Persian city seems a tight, compact settlement, an orderly cluster of dwellings. From the inside, however, it is a labyrinth, a tumble of winding alleys, gard[illegible] pools, courtyards, geraniums, southern sun and a blue [illegible].

Yet it has a clear order, an order based on the pattern of the Persian village. That order is readily apparent to the familiar eye in any urban area, regardless of magnitude.

A village is composed basically of *kutchees,* serving homes, and a central open space, residential in nature, but possibly containing a mosque, a bath, and a few stores.

A small city contains these same elements, but it is larger, and therefore there are more homes, more *kutchees,* and more open spaces. Often it is halved or quartered by streets and a traffic circle, an attempt to open it to outside commerce.

In larger cities, the same pattern is repeated again, on a still larger scale, many more neighborhoods, and, unlike smaller cities, many more streets, all radiating from a central traffic circle. Since modern businesses and services tend to locate along these newer, more open thoroughfares, they have, for many, become the image of the Persian city. In contrast, the *kutchees* and residential open spaces are often called "infill," as if they had somehow superseded the modern boulevards, like squatters on a vacant lot.

Only when we begin to understand that the streets and traffic circles meet the needs of only one side of Persian life will we be able to answer the question asked repeatedly here. "Why," ask many city dwellers, "aren't you building Persian cities?"

One could go further.

Why, one could ask, do we build streets and traffic circles to begin with?

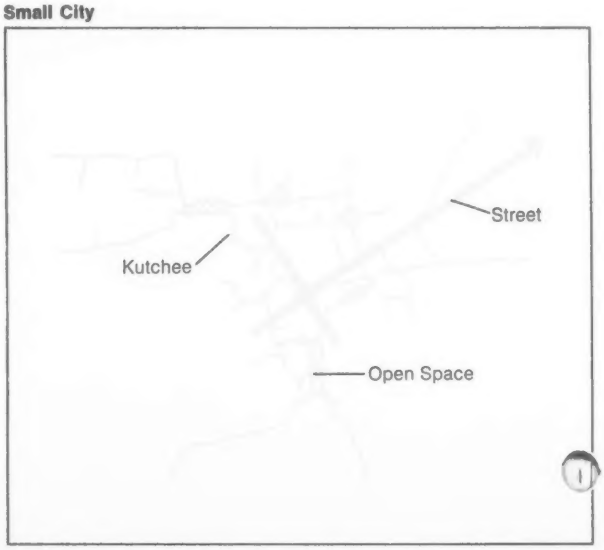
And why must a Persian city be "planned?"

The principal reason for streets and traffic circles is to [illegible] commerce and movement, enabling trucks and buses to move in, out and through cities, while joining them to a national system of communication.

Persian cities must be planned because their inhabitants are now demanding basic amenities unheard of when those cities first evolved centuries ago. Iranians want paving, drain-

Village

Small City



age and sewage facilities, and utilities. They do not want to move their homes to new locations, since they value their neighborhoods, their land and home ownership. And the traditional layout of residential quarters cannot accommodate such improvements without considerable modification.

So city planning and development in Iran has two objectives: first, to upgrade residential areas without disrupting the traditional relationships of urban Persian life; and second, to integrate these traditional areas with the burgeoning new street systems, axes of so much that is modern in Iran.

The first problem is a matter for both government and self-help schemes.

Attempts are being made throughout the country to pave and widen *kutchees.* They are seas of mud in the winter and deserts of sand in the summer, and their width is highly irregular.

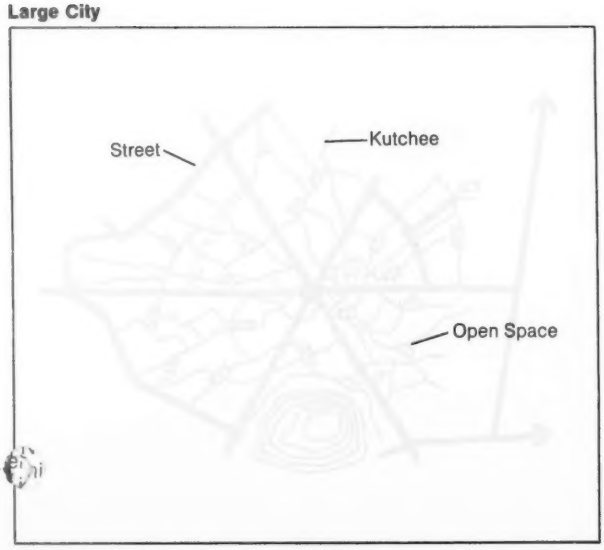
In "dead end" *kutchees,* it is relatively easy to get community action projects underway. Neighbors seem willing to contribute time and money to pave them without government support. Moreover, the government has found that when it takes steps to upgrade a *kutchee* or cover a drainage ditch, local residents will often upgrade their own homes in conjunction with the project, replacing mud walls with brick, and wooden doors with metal.

More important "connecting" *kutchees*—from which "dead end," private *kutchees* branch—seem less amenable to self-help. Here it usually takes municipal action to bring neighbors together. One way the municipality does this is by offering to pay half the costs of paving, provided residents contribute the remaining half. So far, such incentives have met with only moderate success.

But there is a new factor in the equation: the automobile. There are more than ever before in Iran, and as more residents buy them, there will be even greater pressure to pave and widen the *kutchees,* linking them finally to the street system from which they are presently isolated.

Somehow this must be done without destroying the residential districts themselves, so vital to the unity of the Persian city.

Large City



How?

In the Hamadan Engineering Office, where we are stationed, we have been drawing plans and searching for answers to that question.

One of the first we ever attempted was done for Bahar. In it we tried to link the various streets and *kutchees* of the city together, building a new image based on existing circulation patterns.

The plan has two thrusts: it calls for an effort to upgrade the existing city; and it also outlines a program to extend that city beyond its present limits. It calls for the paving of existing *kutchees,* and urges the opening of new *kutchees* and streets. The plan seeks to link up the various centers of activity in the city, the residential open spaces, and the major streets.

To date that plan has not been implemented. Only one open water channel running through one area of the city has been covered. None of the *kutchees* we recommended for paving have been paved, and the existing graded rights of way for the extension of city streets have not been paved.

The failure of the plan is the result of the hard realities which face any planner in a developing country: lack of funds, and limited authority to carry out long-range schemes.

Bahar is a small city in an agricultural area without a steady source of revenue. We could propose an economic program for the city, but the structure of existing ministries gives planners—whether foreign or Iranian—little control over implementation.

If a budget *were* available, another question would arise over the allocation of funds, and the setting of priorities. Municipalities, concerned with their own prestige, would rather put their money into "show" projects, a new boulevard, another traffic circle.

So in our planning for two other cities—Nahavand and Asabad—we are trying a different approach.

To overcome some of the problems of implementation we are drawing a five year plan and a twenty year plan for each city. The five year plans will go to the municipal authorities of each city. Each will recognize projects currently underway in the two cities—both "show" projects and "development" projects—and show how they could be integrated into a long-range, twenty year plan.

Each five year plan will also outline a number of actions that the mayor and city council of each city could execute in a limited period of time. They will suggest which *kutchees* should be paved, where new streets should be opened, where the city could grow, and where subdivisions could be established.

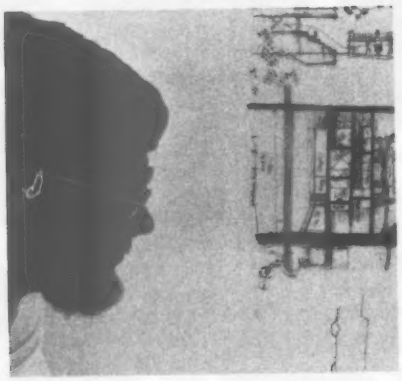
The twenty year plans will be sent to the Ministry of Interior, containing our ideas for the future extension of each city. These plans will be open to revision, to account for changes initiated and completed under the five year plan which might have a major effect on city growth.

Our hope, of course, is that the two cities will attempt to implement the rather moderate proposals of the five year plan.

All of this, however, is only a beginning. We must continue to grow in understanding, to find ways of modernizing Persian cities without destroying the thread of Persian life that weaves them together. For that life *is* the city, and it must be preserved.

Neil Hart is a third-year extendee assigned to the Municipal Engineering Office in Hamadan, a small city in Western Iran. Neil, a graduate of Rensselaer Polytechnic Institute, holds bachelor's degrees in architecture and building construction.

A college of dentistry for Mashad



by Tom Huf and Roger Cavanna

An architect always deals with possibilities, transforming a client's vision and program to paper, and ultimately, structure.

But our job was even more difficult. Our client had no budget or contract to offer an architect. In fact, he had only an idea of the minimum facilities he would need.

Early in 1969, we were asked by the assistant dean of the dental school at Mashad University to design a new building which he could present to the trustees. The building would need to serve an ever-growing dental school without reducing the quality of institution.

Oddly, it was our subsistence pay from the Peace Corps which allowed us to tackle the assignment, to invest time in a project which in the end, could have proven a mere dream. Countries like Iran do not have the money to subsidize detailed planning. But innovation must often be subsidized, especially when practical results may not be realized. The University planning job fell to us because of our positions as Volunteers; we could afford the risk.

Being architects, we naturally became interested not only in the dental school, but also in the University in which it would play a vital part. We felt we should have some idea of the traditions and current purposes of the University, especially if the dental school was to fit well into that design.

We found that the university in Iran had its roots in ancient Arabic institutions—such as the famous medical school of Gondi Shapour—which contributed so much to Western scientific thought. Since the advent of Islam, universities have been centers of Moslem religious thought as well. Indeed, the universities have preserved and blended Arabic and Islamic ideas down through the centuries, often serving the same purpose as the monasteries of Europe, which preserved Greek and Roman thought through the Middle Ages.

In recent times, however, Iran has turned to Europe for new ideas in higher education, honoring and adapting innovations to suit its own needs and society.

Largely because these Western models are accepted by Iran as points of departure, and also because we ourselves were their product, we saw our role as rendering to the dental school a design incorporating the most advanced ideas available.

New universities in Berlin, Houghborough, Toulouse, Dublin, Vancouver and elsewhere gave us models on which to build for Iran's changing needs. All emphasized in their structure a systems approach to learning, and were designed to encourage interdisciplinary contact among their various faculties.

We also had to find a design which would fit the climate of Mashad, the building site, and the particular goals of the administration; one that would be flexible and responsive to changes in priorities.

The University decided to move from its inner-city site to a suburban location. Such an action somewhat puzzled us, especially since our Western universities are just beginning to identify with their surrounding communities and their problems. But the University saw its chief role as the training of professionals and academicians, and this before it could provide talent and money for community involvement.

Our first design was too idealized. It would have required careful planning and consistent long-term goals. The needs of an change, and with them, priorities, faculty, and administration. Our design could not have met these frequent changes. It did, however, alert the trustees to the need for long-range planning. They responded to the general concept of the plan, and the University chancellor authorized further work.

So now we have a second plan. It seeks to link the schools of the University through a central pedestrian axis, bounded by connecting, doughnut-shaped buildings similar to the traditional bazaars and *caravanserais* of Iran. But there is a modern feel to them, and the individual buildings and components of the University are free to change in any way future planners see fit.

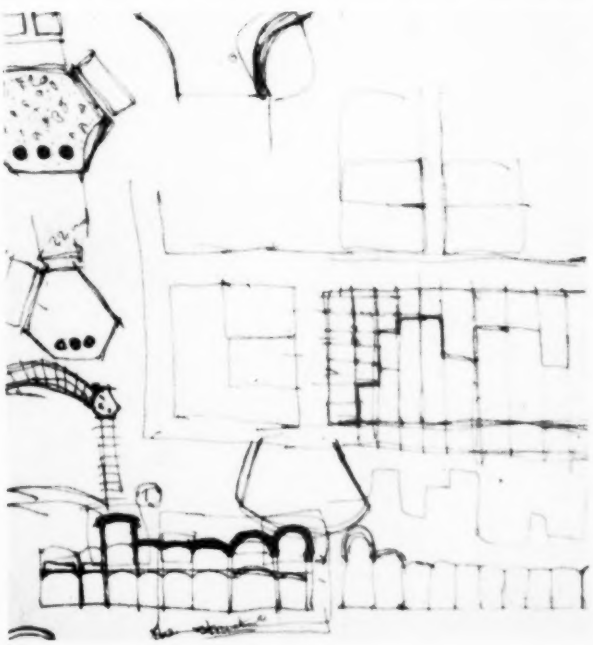
The new plan is still being refined in the planning office of the Ministry of Science and Higher Education. No doubt there will be modifications, but we feel we have convinced the University of a definite architectural form whose design can accommodate new needs. Hopefully, the future of the school will be made more certain by the effect of this overall structure.

As for the dental school—our original assignment before we assumed the task of designing the University—we designed a plan which called for 14,000 square meters of floor space, 12,000 meters more than the original plan.

The size of the building was too large to be engineered by the municipal engineering office in our province of Khorasan. So all that summer of 1969, the Iranian government, through its planning agency, Plan Organization, sought an outside firm which would accept the plans and supervise their implementation.

By August, Parhoon Associated Architects, Engineers and Planners in Tehran had accepted; so that by September, six long months after we had started drawing up sketches in our living room, we had officially become the University's architects. In fact, we had moved into Parhoon's offices, and were discussing the building project with three other architects, six draftsmen, and good mechanical and structural engineers.

We spent six months on plan development. We have been working nearly one year on plan changes. Both drawings and details. The project now has a life of its own, but we have continued to work with it, experimenting with new ideas for the University such as modularization, and an integrated,



mechanical, accessible layout. For example, the dental school has a first floor for large groups and the treatment of patients. The second floor is quieter, with individual study and office spaces. We have anticipated growth by keeping the main corridors open-ended. We also hope we have achieved a unity of purpose in the building by dividing the study area from the clinical area, yet stressing open access to each.

Our presence has been fortunate for the government. Before our arrival, the government had two options: build something temporary and cheap; or hire professional consultants, which it could not have afforded. The Peace Corps allowed us to perform this service, and allowed all concerned to benefit by the experience and the challenge.

Writing this while riding across a dry, mountain-ringed plain . . . tufts of scrub . . . enough to give a green haze to the land, seen from a car . . . sunflowers in a patch of irrigated soil reminds me our site for the university is just as barren . . . Iran, so urban that even her forests and farms are cities . . . networks gathering materials and energy where they do not occur naturally . . . producing the environment needed . . . planting trees . . . irrigating . . . making a garden . . . garden city . . . garden city of the land . . . shade . . . all *that* must be done, I know, before students can walk from a class in oral surgery to the gymnasium.

Roger Cavanna and Tom Huf are third year Volunteers in the Iran Municipal Public Works program.

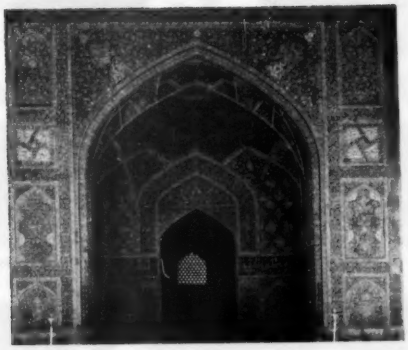
Roger is a graduate of Rensselaer Polytechnic Institute, from which he received bachelor's degrees in architecture and building science. Tom, also a Rensselaer graduate, holds similar degrees.

Roger was originally assigned to the Mashad Engineering Office, where he was first approached for help in designing a dental school. He has since transferred to Tehran to work full-time on the project.

Tom began his tour in the Mayor's Office of Babolsur, near the Caspian Sea. He later transferred to Mashad and then to Tehran to help Roger with the university project.

We depart and now the growing University belongs to Iran.
Plan approved
Risks Taken
Success
We,
Father, mother, sun and moon,
Inwardly disappointed
That we were no longer necessary
To the breathing of our creation
Yet proud that others also
Watched and guided
As it took on a life of its own.

Masjeds: the architecture of meditation



On August 31, 1968, several towns and villages in East Central Iran were devastated by an earthquake which left thousands dead and many more homeless.

One of these was Kakh, a large village of 6,000 people in the middle of Khorasan State. There the quake killed half the villagers and left only one building standing: the main mosque, a beautiful, massive, centuries-old Islamic structure.

But it was badly damaged.

James Durfey was assigned to the Khorasan State engineering office in early 1969. One of the first jobs he was given was that of designing a new mosque to replace the battered structure in Kakh. It was an odd task for a young, Western outsider, but Durfey proceeded as best he could.

Now, a year later, he has a plan. Iran associate director George Sakkal reports it has been approved by the government, and construction will begin shortly.

The mosque, or masjed, *as it is known in Iran, is one of the most dominating architectural forms developed in man's cultural history, incorporating designs and motifs so compelling they spread from Spain to northern India in a remarkably short period of time.*

In his book, Islamic Art, *David Rice suggests two reasons for the pervasiveness of Islamic style.*

"In the first place," he says, "the artists did not seek the new and unfamiliar in the way that the [Western] Renaissance artists did, but rather remained attached to [the Byzantine and Sassanian cultural and artistic heritage] whose merit had been sanctioned by time and convention, seeking to renew its appeal, rejuvenate its character, by subtle variations of detail."

In the second place, says Rice, the universal adoption of Arabic script in one or another of its forms "made the art of the Islamic world into a distinctive style, the distribution of which coincided with the bounds of faith, and not with those of any particular ethnic or political element within it."

Durfey was naturally reluctant to write about the development of his particular design, one intended to replace an old and honored building. Instead he has chosen to describe the traditional forms and functions of a typical mosque, letting that description speak for the design itself.

by James H. Durfey with the collaboration of John Holehan

Men and animals, absorbed in daily chores, are at first inattentive to the call from the *minaret,* flowing down from the rooftops, blending into the pattern and fabric of their city, into the sounds of anxious donkeys, ungreased cart wheels, bicycle bells and taxi horns, scattered talk and children's screams.

But the sound is never lost.

It is distinct, a holy wail awakening the minds and spirits of the people. It is the call to prayer, a call that is heard three times a day throughout Iran, urging the faithful and able-bodied to communal worship.

Some begin to move to the nearby *masjed* (mosque). Others will remain in their fields or in their houses to observe the piety of ancient prayer. For in the democratic brotherhood of Islam, prayer is a religious art of simplicity, reflecting its ancient origins as a private ceremony of the home, a communication between one and *the* One, the Almighty God.

Islam was established in 621 A.D. by the prophet Mohammed. As its doctrine spread, and the brotherhood of faithful grew, the *masjed* was developed to serve a desire for communal worship. It provided a clean place for prayer, an open door and religious sanctuary for weary travelers. It also came to be a retreat for contemplation and rest, a site for public speeches and instructional talks, as well as a station for mourning and special services, and a convent for study.

The mosque also became, in a sense, the heart of every Arabic city, town, and village, the center of the everyday life of the people. Built by kingly decrees and donations by wealthy merchants and ordinary citizens, *masjeds* sprang up everywhere, most often in the midst of shopping areas.

Though numerous and diverse, all *masjeds* share common elements based on the tenets of Islamic doctrine.

Entering one from a crowded bazaar or street, one first encounters a garden, an oasis of trees, flowers, and pools of water, a natural setting, breaking contact with the secular world outside, providing a transition from the public thoroughfares to the holy area.

Above this level, a main entrance dominates the garden, drawing the faithful through its inviting and open arch into an enclosed foyer.

Here, before the flowing water of a mosaic tile basin, worshippers pause and assemble, washing hands, faces, and feet, a religious ablution in which the spirit is cleansed and old sinful acts washed away. They remove their shoes and put them on shelves along the far side of the foyer, and then move on.

From the washing area, the congregation moves into a central prayer room, drawn by the serenity of the soft, carpeted interior. The room is a large, unencumbered level area, without screens or partitions which would hinder the feeling of togetherness. Pointed towards Mecca, the holy center of Islam, the prayer room is the center of worship.

At the focal point of the room is a *mihrab,* a stone or plaster tablet set into the wall, bearing written prayers from the Koran, as if the spirit of the holy city had been projected and captured on the wall to enlighten the faithful. The *mihrab* marks the specific direction of Mecca and hence sets the direction of the worshippers.

To the right of this focus is a staircase which leads to a platform on which is a chair. The chair is for the *mulla* (religious instructor), who lectures on the Koran, and leads the faithful in prayer and in mourning during special services.

The men sit together on the carpets facing the *mihrab, a* brotherhood praying, now an integral part of the building.

The women, separated from the men, pray together in the balcony, excluded to allow for the greater concentration of the men.

The prayers themselves are repetitious, flowing, poetic, rhythmic. From a standing position, the men begin to chant. Hands are raised, outstretched in offering to God, and then placed to cover the ears. Once more standing erect, then slowly bowing before the *mihrab,* the worshippers extend their hands forward and down upon the knees. They kneel and bow again, their foreheads touching a small stone placed before them, a concession to the earth from which they came, and an act of personal humility, fluid movements, a rhythm, kneeling, bowing, a song, a prayer, a oneness with God and each other.

Then they all rise. The experience of communal worship is over.

A *masjed* must relate in design to this simplicity of worship. All ornamentation must be homogeneous and organic, a part of the structure. None of it should distract.

Remembering the concentration required in prayer one must keep outside distractions to a minimum: glaring windows and harsh lights, external noises, and views other than natural ones. Forms identified with other religions should be avoided, such as the use of stained glass, which hints at the ancient and pagan sun worship of the early Arabians.

The small tea room and reference library placed off to the side or behind the prayer room must not interrupt the line of vision. Entrance to the toilets is excluded altogether from the interior of the mosque. Access to the center room and all anterooms is always made from the garden. Individual cubicles for study must be placed perpendicular to the axis of Mecca, so that persons using them face neither towards nor away from the holy center.

The building's arches should be smooth, quiet, undominating, in harmony with the entire structure. Corners and mouldings are never sharp, being either broken, flattened, or beveled.

Outside, there is always a *minaret,* rising above the main structure of the mosque, a strong, visual point of reference. In years gone by, Iranian architects usually built two, symmetrical about the axis. Today for practical purposes, only one is used, placed on the center line of the building, keeping the axis clear and defined.

The total structure is bound together by Arabic writings from the Koran, done in a variety of beautiful sculptural forms on its tiled surfaces, completing the transformation of the building into the Word and Presence of God.

James Durfey and John Holehan are both third-year Volunteers in Iran.

Jim holds a bachelor of architecture degree from California State Polytechnic College. Originally assigned to the State Engineering Office in Semnan, he transferred for his third year to the State Engineering Office in Mashad, in eastern Iran, where he has helped design several new traditional structures ranging from a bath house to a mosque.

John is a graduate of the University of Syracuse, from which he received an associate science degree in civil technology. He is responsible to the Office for Surveying and Drafting in Mashad, where he works with James Durfey. John recently married, an Iranian, who assisted in preparation of this article.

Disaster in the Eastern Caribbean . . .
On Saturday, August 1, the *Christina*, a ferry operating between the West Indian islands of St. Kitts and Nevis, overturned and sank while on a routine voyage.

The sinking claimed the lives of 245 people, including several teachers and civil servants, nurses, and the area's only government architect.

The total population of the two islands—members of a tiny federation comprised of St. Kitts, Nevis and Anguilla—is only 55,000.

Volunteer correspondent Phil Ternahan reports that the disaster was "probably the worst these islands have ever experienced."

There were roughly 20 Volunteers stationed on St. Kitts and Nevis at the time the *Christina* went down, 3 nurses and 17 teachers. Most of them were touched directly through the loss of students and friends, and all of them helped in relief work.

The two St. Kitts nurses reported to the hospital on Nevis immediately. Two teaching Volunteers, George Romero and Terry Green, helped ashore as bodies were recovered.

Paul Ippel and his wife Trudy who were at the Nevis pier the afternoon of the sinking helped to establish a temporary orphanage for 13 children. And as of September they had raised about $1,200 to pay for books, crayons, and supplies from American churches and schools.

The experience was shattering.

"We sat home that night," Ippel wrote the *Volunteer*, "listening to the national radio station. We were numbed by the cold of death that had taken so many of our friends. The only escape from heartache was sleep . . ."

Within hours of the sinking, the United States, Britain and France sent ships, helicopters, and medical supplies to assist. They left the following day when the search for survivors was called off.

According to *Volunteer* Correspondent James Retter, "Nothing was left behind to aid the island's one undertaker or the government with the logistical or hygienic problems created by hundreds of drowned victims. And there is the continuing problem of the orphans."

The heavy loss of life intensified the hardship which is already a way of life for the islanders.

Retter, a teacher on St. Kitts, wrote in late August:

"The islanders have already suffered for generations under slavery, with its legacy of broken homes and separated families. There is also the legacy of a sub-standard educational system with many of the islands' children even today without textbooks, classroom space, libraries or supplies. Emancipation may have freed the slaves, but it did little else.

"Migration to the U.S. Virgin Islands for job and educational opportunities has perpetuated the heritage of broken homes and separated families out of utter economic necessity. Inflation has chicken priced at $1.60 a pound and eggs at 16 cents each. Yet the average income here is only $200 per annum.

"The sinking of the *Christina* becomes all the more a tragedy with the loss of breadwinners who were taking advantage of a three-day holiday weekend to return home from the Virgin Islands to family and friends with money, clothing and other essentials. In this sense, the sinking has left a scar on scores of children orphaned without any means of support."

Anyone desiring to do so may send contributions of money to:
Christina Fund
Barclay's Bank: Attention Mr. Newton
Charlestown, Nevis
West Indies

Books, clothing or toys for the orphanage may be sent to:
James Retter
Peace Corps Volunteer
Old Road, St. Kitts
West Indies

. . . Floods in Puerto Rico . . .
More than 150 Peace Corps trainees and staff members from the training site at Ponce, helped evacuate villages, provide emergency food and shelter, and staff medical teams in Puerto Rico during torrential rains which battered the island for three days in October.

The downpour, which dropped 32 inches of rain on some areas and sent floods sweeping down from the mountains was the worst in recent Puerto Rican history.

At least 50 people died in the floods, and damage is estimated at some $70 million. The island has been proclaimed a disaster area by President Nixon.

In a telephone interview, Acting Director at the Center, Dudley Hoolhorst said the Peace Corps was asked by the Puerto Rican Office of Civil Defense and local Red Cross to send help on October 9, shortly after the deluge began.

Relief teams worked around the clock in schools, churches and community centers distributing emergency food and clothing to evacuees until Monday, October 12.

Two five-member Peace Corps teams trying to reach the mountain area of Barrio Arus, crossed a bridge only minutes before it was swept away by cascading waters.

And for all of the trainees, many of whom had arrived only two days before the rains, the experience was a rude baptism.

Said Hoolhurst: "We were happy to be able to repay in a small way the debt owed the people of Puerto Rico for help in training thousands of Volunteers since 1961."

. . . While Peace Corps Moves to Support Relief Registry
The loss of the *Christina* and the flooding of Puerto Rico were but two disasters in a year which has seen earthquakes in Peru and Iran, cholera outbreaks in West Africa, a typhoon in the Philippines and a cyclone and tidal wave in the Bay of Bengal.

Each year thousands of people die in such natural and unnatural calamities, and each time one occurs there is an immediate need for outside relief assistance.

The Peace Corps and the International Secretariat for Volunteer Service (ISVS) have now moved to create a permanent list of active and former Volunteers from around the world who would be willing to serve on temporary multi-national relief teams in the event of future disasters.

Michael von Shenck, head of ISVS in Geneva, was in Washington in late October to discuss the proposal with Peace Corps officials. And

word now is that the agency has agreed to help the Secretariat contact all former Volunteers, nurses, and physicians to inform them of the relief list.

ISVS proposes to call the list "Volunteers for Emergency Relief Organizations" (VERO's). The name clearly indicates the intent of the organization.

Using lists of returned Volunteers and medical personnel who have served with the Peace Corps or other national Volunteer organizations, ISVS plans to distribute a packet next year containing an information booklet, a data card, and an employee release form.

Any former Volunteer who wishes to register for the list will be asked to obtain a standing temporary release from employment from his employer and to complete and return the data card. From these cards, ISVS will then compile a data bank of potential VERO Volunteers, to be maintained in Geneva. Then they will prepare and distribute lists of those in the bank to all interested relief organizations, classified according to technical qualifications, region of previous Volunteer experience, language ability, and nationality.

In the event of a future disaster, relief organizations or government agencies could then contact volunteers in North America or Europe by using current ISVS lists or by asking ISVS for a special list from its Geneva data bank.

In all events, interested relief organizations will be responsible for contacting and mobilizing their own Volunteer teams. Neither the Peace Corps nor the Secretariat will attempt to provide such teams themselves. The registry is intended to strengthen the capabilities of present groups like the Red Cross, Oxfam, or the Catholic Relief Services, not to compete with them.

ISVS hopes to contact all of the 50,000 former Volunteers now living in North America and Europe in the coming months. But the organization expects to hear from only 5,000.

Of these, ISVS hopes to place about 500 on the VERO registry in 1971.

Peace Prize Goes to Miracle Crop Developer

The 1970 Nobel Peace Prize has been awarded to Dr. Norman Borlag, head of the Rockefeller Foundation's Plant Breeding Center in Mexico.

Borlag is credited with having developed new "miracle" wheat crops now being planted in many developing countries. And his success with wheat led the Ford Foundation to undertake an equally successful search for a "miracle" rice at its own research institute in the Philippines.

The Peace Corps has been helping to plant several of the new wheat and rice strains in four Asian countries since 1967, when two Volunteers heard of the research project in the Philippines and went off to the Institute there to learn more of its work.

Today there are approximately 100 Volunteers teaching cultivation of the new strains in Malaysia, India, Thailand and the Philippines.

Grain yields in some countries subsequent to introduction of "miracle" crops have been astounding, so astounding, in fact, that some people have begun to talk of a "green revolution" in the developing world, though others are less certain of the term.

Between Borlag's early research and the impressive increases in crop yields lie a million dramas, each with a farmer and many with an outside volunteer adviser from North America or Europe.

Of these Volunteers, agriculturalist Lester Brown has said:

"They have provided an important manpower link in the transmission of the new technology to farmers in villages."

How important that link is was suggested in Congressional hearings earlier this year by Secretary of Agriculture Clifford Hardin:

"There is no magic in new technology," he warned, "unless it is applied.

"The progress to date indicates to me we have the technology in hand or in sight to feed the world's people better than they have ever been fed before. But only if we put it in the right place and use it correctly—and that means an effort of unprecedented magnitude."

Volunteer Larry Pearmine and two Liberian farmers study the progress of an experimental, high-yield rice plot.

Peace Corps Oath Changed

"I do not advocate . . . nor am I a member of an organization which advocates the overthrow of our constitutional form of government."

That line, long a fixture of government oaths, has now been dropped by the Peace Corps in the wake of a 1969 Supreme Court ruling which declared it unconstitutional.

The ruling grew from a case involving District of Columbia teachers, who are considered to be employees of the U.S. Government.

But it obviously had government-wide implications.

Early this year, the Justice Department said it would not fight any other cases which might arise out of use of the line in question by other government agencies. So the Peace Corps dropped it.

All Volunteers and staff members, however, must still swear to an oath before working for the agency.

The new one:

"I do solemnly swear that I will support and defend the Constitution of the United States against all enemies, foreign and domestic, that I will bear true faith and allegiance to the same, that I take this obligation freely, without any mental reservation or purpose of evasion, and that I will well and faithfully discharge my duties in the Peace Corps. So help me God."

Escondido Closes

After lengthy discussion and debate, the Peace Corps has decided to close down its Latin American training center in Escondido, California, and to expand the facilities of the agency's other training site in Puerto Rico.

In announcing this move Deputy Director Tom Houser cited several factors which influenced the agency's final decision. Most important were the declining numbers of Volunteers being trained for Latin American service, and a move towards in-country training in all Latin American programs, one which is likely to continue in the future.

Escondido will close officially on January 31, 1971. In the meantime, training goes on, while many Escondido staff members prepare to move South for the winter.

People

Born: Andrea Nicole Blatchford, first child of Joseph Blatchford and his wife Winnie, on September 22, exactly one year after the Director's first announcement of a program to recruit families.

Married: Former Peace Corps Director Jack Vaughn and Margaret Weld, a returned Volunteer who served two years in Chad and later worked on the agency's Washington staff; in London, on October 20.

Vaughn resigned earlier this year as Ambassador to Colombia in opposition to current American foreign policy. He took up new duties this month as President of the Washington-based Urban Coalition.

Terminated: Barkely Moore, 28, after serving more than six years as a Volunteer community development worker in northern Iran, longest tour in the Peace Corps' nine-year history.

A legend in Iran, Moore was the first Volunteer ever asked to extend by the Iran Government.

During his six years of service, Moore taught more than 40 hours of English a week, helped organize a large public library, conceived and implemented a school science program, established an archaeological-anthropological museum, organized a sports club, started an extensive kindergarten program in his town which is now being carried on by Iranian teachers he helped train, and helped mobilize community support for two new schools.

Moore accomplished this through unusual drive and cultural sensitivity.

A Volunteer who served with him for two years once wrote:

"Being in the Peace Corps has made me realize one important thing: we don't know much about the peoples of the world, how they think, work or what they believe in.

"We need to be fully aware of other peoples' ways of life, to respect them and try to work through them and not impose ours."

"Barkley has done this brilliantly,"

That judgment is one shared by most of the people who know him.

What will he do now?

He is not yet certain.

At last report, Moore was taking a long, slow trip home.

Volunteer Barkley Moore and the Honorable Mr. Sadu, Governor-General of Mazandaran Province, Iran at 1967 opening of the Gonbad Public Library.

switchboard

Volunteers are often asked about college and university study in the United States by students and friends abroad.
The Information Resources Division library here recently called our attention to two publications which may be useful to you.

Both are published by the College Entrance Examination Board, and both are available in single copies at no charge (bulk orders will cost you 10 cents a copy) from the CEEB Publications Order Office, Box 592, Princeton, N.J. 08540, USA.

The booklets are:

Entering Higher Education in the United States: A Guide for Students from Other Countries: This guide provides information to help a student determine his eligibility for study in the United States, tells him how to *prepare* to apply for admission, and discusses the practical details of actual application, once he has decided on an American school.

Financial Planning for Study in the United States: A Guide for Students from Other Countries, 1970: This booklet, unlike the previous one, provides general information about the cost of study in the United States, and the kinds of financial aid available to foreign students. Also listed are several publications and agencies which attempt to help students from abroad who wish to attend an American university or college.

Estimated dollar amounts are given for 11 categories of expense: application; travel; tuition and fees; housing and food; books and supplies; medical services and health insurance; health expenses not covered by insurance; clothing; miscellaneous; holiday periods and summer.

Joshua Brackett (Ethiopia III) has started a monthly newsletter for laymen working against drug abuse.

He is interested in hearing from RPCVs who might be potential subscribers and/or correspondents.

For further information write: Joshua Pratt, *turnaround,* 157 State Street, Brooklyn, New York 11201. He will send a sample copy to anyone who writes.

Editor's Note—The following is the latest installment in a growing discussion of possible ex-Volunteer involvement in an international craft marketing cooperative. Previous notes and queries on the subject may be found in the Switchboard *section of the last three issues of the* Volunteer.

This letter is from John David of The Group, a world wide association of former Volunteers with American offices at 511 Clark Street, Morgantown, W. Va. 26505. The original copy was sent directly to the Antonson's, whose own letter appeared here in the July-August issue of the Volunteer.

I was quite excited to hear about the craft co-op idea. . . . We have been playing around with a similar thought for over a year—so we set something up called Third World Imports. Our scheme was to obtain crafts at the grass-roots level from co-ops and/or from PCV craftsman contacts. Stateside we planned to utilize RPCVs to push the goods.

Surprisingly, distribution is not the weak link in the scheme, since we are a group of RPCVs scattered all over the United States and Europe and publish a newsletter *(Nkwantabisa)* regularly. Thus, we can provide some contacts here who can push items directly or through shops in their locale. We have, in fact, standing orders from a number of RPCVs. In addition, we are in touch with AFRO-ART in Stockholm, which is a non-profit shop that buys only from co-ops, as well as some British returned VSOs who once had a similar idea.

The main problem we have had is raising funds so we can buy stuff, get it over here, and distribute it to contacts. Towards this end, Paula Kuczenski, our financial secretary, is meeting with Brian Whisman, the RPCV of Quality International *(see March-April* Volunteer, *pg. 23—Ed.),* hopefully to thrash out a set-up. In addition, I am trying to write around and see if any funding might be available.

We would like to exchange further information and suggestions with active and former Volunteers.

Been asked lately about a pen-pal in the States?

Your friends back here getting a little tired of handling all those queries?

Jesse Gibson in the Information Resources Division advises us there are several American organizations which try to get pen pals together.

Here they are:

International Friendship League, 40 Mount Vernon Street, Boston, Mass. 02108.

International Students Society, Hillsboro, Ore. 97123.

League of Friendship, P.O. Box 509, Mount Vernon, Ohio 43050.

Letters Abroad, Inc., 18 East 60th Street, New York, N.Y. 10022.

Student Letter Exchange, 821 East Elm Ave., Waseca, Minn. 56093.

World Pen Pals, World Affairs Center, University of Minnesota, Minneapolis, Minn. 55455.

We have as yet, no way of evaluating the relative effectiveness or efficiency of these outfits. But they reputedly have contact with individuals of all ages in the United States who *do* want pen pals abroad. We suggest you write directly to them for further information.

Sanford Danziger, communications specialist at the Escondido Development and Training Center is currently preparing an extensive catalog of good, available and inexpensive (i.e., around $1.50 each) filmstrips which Volunteers have found appropriate for village-level work. Publication of the booklet is scheduled for November, but Danziger is still interested in hearing from members of the Peace Corps community who might know of titles that should be included.

If you have a suggestion, write: Sanford Danziger, M.D., Communications Coordinator, Escondido Development and Training Center, Peace Corps, Escondido, Calif. 92025.

Several active and former Volunteers have suggested we recommend a publication called the *Whole Earth Catalog* to the Peace Corps community.

The latest probe is from Jim Kushner. a former Volunteer now living in Grand Forks, N.D., who writes: "The . . . *Catalog* and its wonderfully catholic lists of things and ideas would fit right in with your 'Survival' or 'Switchboard' or whatever section it is that deals with rural methods of living. If the Peace Corps still had booklockers, I'd say put

it in each one."

The *Catalog,* now well-known in the States, is difficult to describe. The publisher's premise is, briefly, that "We are as gods and might as well get good at it." The tools to do this, he thinks, are already available, tools that can help an individual "conduct his own education, find his own inspiration, shape his own environment, and share his adventure with whoever is interested." All you have to know is where to get them, and that is where the *Catalog* comes in.

The *Catalog* is an incredible compendium of gadgetry, books, other catalogues, and ideas, collected under sections titled "Whole Systems", "Shelter and Land Use", "Industry and Craft", "Communications", "Community", "Nomadics", and "Learning"; a Sears, Roebuck catalog for alternate society freaks, or anybody trying to lay hands on "how-to-do-it" information on virtually any subject, from natural childbirth to organic gardening, from new maths to pressed-earth housing.

The catalog is published twice yearly, in the Spring and in the Fall. But a $1.00 supplement—a slimmer volume which contains a great deal of reader correspondence and new suggestions—is published quarterly, between appearances of the parent *Catalogue.*

The whole enterprise is great fun and, we suspect, relevant to much Peace Corps work. The old Peace Corps publication, *Tech Notes,* was even listed at one time, before Peace Corps officials asked it be withdrawn because of the agency's small printing budget.

We called the publisher to find out about subscriptions. Here is the set-up:

Past issues of the *Whole Earth Catalogue* and *Supplement* may be purchased from Book People, 2010 Seventh Street, Berkeley, Calif. 94710. Cost of the most recent *Catalog* (Spring, 1970) is $3.00, which does not include postage. The two latest supplements (January and March) are also available at $1.00 each.

If you are interested in a subscription, however, write directly to the *Whole Earth Catalog,* Portola Institute, 558 Santa Cruz Ave., Menlo Park, Calif. 94025. The current subscription for one year (two big *Catalogs* and four supplements) is $8.00, not including postage. But we strongly advise you write the *Catalog* people first, before sending any money. They are about to sell out to a big-time publisher, and that will alter current subscription arrangements considerably.

The *Volunteer* magazine currently has active correspondents in only half of the countries in which the Peace Corps is working.

We need more, in order to remain responsive to the Volunteer community which we serve.

Qualifications: ability to write in clear, concise English, and contact with a large segment of the Volunteer community in your country. Background in journalism is helpful, but not required.

Duties: serve as an in-country editor for the magazine, covering stories of significance in your country and helping research depth stories of interest to the entire Peace Corps community (ecology, low-cost housing techniques, the impact of nationalism on Peace Corps work in Africa and Latin America, etc.).

If you are interested, write John Osborn, Editor, *Volunteer,* Peace Corps, Washington, D.C. 20525. Send a sample of your writing and some information about your background and the nature of your Peace Corps assignment. Please send your letter through your country director.

Photo Contest

The Peace Corps is currently preparing to celebrate ten years of involvement in international volunteer work. In conjunction with that anniversary, the Office of Public Affairs announces a Tenth Anniversary Volunteer Photo Contest, open to all present and former Volunteers.

A panel of distinguished judges is being selected and will be announced in a future issue of the *Volunteer.* Prizes will consist of camera equipment, donated by two or three well-known manufacturers. These will also be announced in the near future.

If you are an active or former Volunteer, you are eligible to enter.

All entries should be packed carefully between sheets of cardboard, and must be mailed to reach Washington headquarters on or before February 15, 1971. Judging will be done in March, and the winning entries will be enlarged and appropriately mounted for exhibition throughout the United States. All finalists and winners will retain full rights to their photo entries.

Here are the contest rules, as announced by Susan Biddle, contest coordinator:

- *All photo entries must reflect in some way the meaning of your Peace Corps experience* and must have been taken *during your term of service* overseas. Only Peace Corps Volunteers and returned Volunteers are eligible.
- *Photos may be submitted in either of the following categories:*

I. *Black and White.*

- 8 x 10-inch glossy prints must be submitted.
- Your name, address, and the date and place your photo was taken *must appear on the back of each entry.*
- Photo entries may be developed and printed by a photofinisher or photographer. No composite pictures—such as multiple printing or montages—are eligible. No artwork or retouching of prints or negatives is permitted.
- Negatives should not be submitted. Prints will be returned. Winners' negatives will be borrowed for preparation of a photo exhibit.

II. *Color.*

- Color transparencies or prints may be submitted as color photos.
- Transparencies must be originals and must be mounted between cardboard, plastic or metal frames.
- Color prints must measure approximately 8 x 10 in.
- Your name, address and date and place the photo was shot, must appear on the back of each print or cardboard mount.
- Prints and transparencies will be returned.
- *Each contestant may submit a maximum of 15 photographs.*
- *All entries must reach Washington headquarters on or before February 15, 1971.* They should be addressed to:

Miss Susan Biddle
10th Anniversary Photo Contest
Office of Public Affairs
Peace Corps
Washington, D.C. 20525 *USA*

PAGE(S) MISSING

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Function: To provide helpful housekeeping and medical information to members of the overseas Peace Corps community.

Purpose: To encourage Peace Corps Volunteers to share these problems and their solutions.

Procedure: Address all ideas and suggestions to Survival, *Volunteer,* Room 622, Peace Corps, Washington, D.C. 20525. Include as much factual information relating to your item as possible. Pictures are even better.

This month *Survival* takes to the kitchen.

Eating is one of the most organic things any of us do during the course of the day, and food is the vital input.

Here is what American philosopher Alan Watts has to say about the whole process in his book, *Does It Matter?:*

A living body is not a fixed thing but a flowing event. . . . We are particular and temporary identifiable wiggles in a stream of energy that enters us in the form of light, heat, air, water, milk, bread, fruit, beer, beef Stroganoff, caviar, and pate de foie gras. It goes out as gas and excrement—and also as semen, babies, talk, politics, commerce, war, poetry and music.

So much for the poetry of the scene.

The hassel abroad is finding the right stuff to put *in,* a matter of basic nutrition.

The Peace Corps' *Guide to Health* contains some basic information on daily requirements on pages 36 through 37.

Recently we came across another source in the Iran Peace Corps *Cookbook,* assembled by Volunteers there and based in part on an earlier Peace Corps Afghanistan compendium.

Here's what they say about what you *should* eat if you can get it and what to do if you can't:

Certain foods in definite quantities are required each day to uphold basic health standards. To make it simple for you to plan meals . . . they are presented in the four basic food groups.

* *Meat, eggs, cheese, milk products (yogurt):* These are the foods highest in protein, the basic element needed for growth and repair of tissue. These foods should form the basis of your daily diet.

An adequate diet should include daily the following: one egg, eight to twelve ounces (220 to 340 gms.) of meat (in two meals), and two cups of milk. Foods that can be used as substitutions are:

For meat: fish, peanuts (or peanut butter), beans, cheese.

For milk: yogurt, ice cream, creamed soups, custards.

Getting the idea?

* *Breads and cereals:* These are your biggest source of Vitamin B and calories. You must include some foods in this group since Vitamin B is essential. For those who can afford the calories, a minimum of four to six servings a day is average. Starch foods are usually more filling and satisfying, so they can form the bulk of your meals.

This group includes such foods as bread, rice, grains and grain cereals, macaroni, some beans, custards and pies, potatoes, corn and corn products. One helping is considered to be: a 10 cm. square of *nan* (for those of you in the Middle East and India), one slice of bread, one-half cup rice, one-half cup of cooked spaghetti or macaroni, one-half cup of cooked cereal, or three-fourths cup of dry cereal.

* *Fruits and vegetables:* We will discuss these together since their preparation and cleaning is as important to your health as the eating of them.

These foods give you most of the vitamin and mineral supplies in your diet. *But there is one thing you must remember:* since foods in this group are seasonal, often expensive, and sometimes safely edible only when cooked, it is in your best interest to take a daily vitamin supplement (included in your medical kit and replaced upon request).

The basic requirements in this group are: *Green, leafy vegetables* (lettuce, cabbage, water cress, etc.): two helpings daily.

Yellow vegetables (carrots, squash, etc.): one helping daily.

Other vegetables: at least two helpings daily.

Citrus fruit: one helping daily

Citrus fruit, as we all learned in grade school, is our main source of Vitamin C, essential to maintaining good skin and hair condition, wound healing, and keeping up resistance to infection,

especially upper respiratory infections. The vitamin is not stored in the body so it must be replaced each day. Oranges, grapefruit, sweet and sour lemons, tangerines, and tomatoes are sources of Vitamin C. If you cannot get such foods daily, you should buy Vitamin C tablets to supplement your diet. There is, however, no point in taking Vitamin C and eating fruit at the same time, since the body merely uses what it needs and discards the rest.

* *Fats:* Sounds awful, but three to four helpings of fats are required in the normal daily diet. Because of their high calorie count weight watchers will want to cut down, but at least two servings must be included since Vitamin A and Vitamin D are fat-soluble vitamins and cannot be used without its presence.

Useful fats include: yellow of eggs, butter, bacon, shortening, peanuts and peanut products, oils, chocolate.

Both the Iran cookbook and another put out by Malawi Volunteers in 1966 list a number of substitutions that can be made in standard recipes to help you cope with local shortages. Here is a compilation of their suggestions:

1 tablespoon starch = 2 tablespoons flour (for thickening).
1 quart skim milk = ¾ cup dried milk plus 4 cups water or 2 cups evaporated milk plus 2 cups water.
1 whole egg = 2 egg yolks or 1 tablespoon custard.
1 cup sour milk = 1 tablespoon lemon juice or vinegar plus sweet milk added to make one cup or 1 cup yogurt.
1 ounce unsweetened chocolate = 3 teaspoons cocoa plus 1 teaspoon shortening.
1 teaspoon baking powder = ¼ teaspoon baking soda plus ½ teaspoon cream of tarter.

Finally, a recipe or two. Subject: groundnuts (or peanuts, as they are known in the American-speaking world), a protein substitute now widely available in Africa and the Middle East.

Peanut Butter (from the Malawi cookbook): Run roasted peanuts through your meat grinder about four or five times, or pound them in a pestle. Add a dash of salt and a *small* amount of oil and mix until creamy and smooth.

But don't expect Peter Pan. Richard Ainsworth (RPCV-Malawi) advises us the resulting mix is mostly crunch and little cream. There must be a better way of doing it, perhaps by mixing in margarine or butter?

Groundnut Stew a l'Afrique de l'Oest (from the British returned volunteer newsletter):

Method 1: Put one-half pound of unsalted peanuts through a mincer twice, or grind in a pestle. Peel and slice an onion and three tomatoes. Fry gently in fat until soft. Add nuts and cook briefly. Add one pint of water, salt to taste, and a spoon of curry powder to taste. Stir well and simmer 20 minutes. Adjust consistency by adding water or nuts.

Method 2: Trim and cube two pounds of stew meat. Simmer in salt water with some onion until tender. Boil the contents of a jar of peanut butter in a pan with some water until the mixture turns a coffee color. Now drain off the liquid from the cooked meat and add the peanut mess to the meat, including some meat liquid if necessary. Boil. Add chopped onion, okra, a large tin of tomato puree. Stir well. Add more liquid if necessary. When stew is fully cooked, natural oil will bubble to the surface.

making it

Function: To publish technical solutions to development problems from members of the Peace Corps community.
Purpose: To encourage the sharing of such information among members of the Peace Corps community.
Procedure: Address all articles or queries to: Making It, *Volunteer,* Room 622, Peace Corps, Washington, D.C., 20525, USA. If possible enclose pictures and technical drawings. If your device or idea has been tested and evaluated, please include that information as well.

by Steve Bender

In response to the May 31 earthquake in central Peru, the Peace Corps, in collaboration with the *Dirección de Cooperación Popular (COOPOP)*— the Peruvian government's agency for rural development—designed an economic and easy-to-construct temporary house for use in devastated areas.

With 500,000 homeless persons [illegible]ing shelter in the crowded cities and rural areas of the semi-arid coast, the Andes and upper jungle slopes, there was a great need for such temporary, family-sized dwellings. We wanted a house that could be built from local materials by the affected people, with minimal building time, cost, and technical assistance.

Taking advantage of the remaining stock of a steel plant located in the affected area and the local cane mat "cottage industry," we developed a quonset-hut-shaped, earthquake-proof house, with 27 sq.m. of floor space. It is a welded frame of steel re-bars and a covering of cane mats and construction plastic. The cost is S/100.00/sq.m. (Peruvian currency) or $0.22/sq.ft. (U.S. currency) excluding labor, but including welding costs. Here's how it's put together.

Steel arches are prepared by bending five-eights inch re-bars (reinforcing bars) around stakes placed in a semi-circle on a level piece of ground. The rebar is held to the form by a number 16 wire tie at the foot of the arch. The perimeter of the arch is 7.20 m. (the width, with lapping, of four mats), which leaves sufficient [illegible]erial at each end of the bar to be [illegible]t into a j-shaped hook for foundation purposes.

Longitudinal and diagonal pieces are made from three-eights inch re-bars. cut and marked for welding beforehand to speed fabrication of the frame. After they have been shaped, the arches are held erect and the longitudinal bars are welded to them, followed by diagonal bracing (see frame plan drawing: fig. 1). The number 16 wire tie on one of the end arches is replaced by a three-eights inch re-bar, and a doorjam made from three-eights inch re-bars is welded in place. The frame is then covered with cane mats, which are wired (with number 16 wire) to the re-bars to form a shell.

Depending on the climate and desired period of use, the shell may be left uncovered, or roofed with construction plastic, earth, or concrete. If construction plastic is used, it can be fixed in horizontal strips to the cane mats with tar. If earth or concrete is used, the cane mats must be wired to the frame with their unfinished sides up, providing a lathing, and the arches must be spaced at 0.95,. o.c. with extra diagonal bracing on the top half of the frame. Plaster may be added to the earth or concrete to provide a quick-setting mix.

End walls may be constructed of plastered mats, in which case diagonal members (three-eights inch re-bars) must be added. Doors and windows are provided as desired and available.

The hooked ends of the arches are placed in individual holes and filled with large stones and gravel, which serve as an adequate foundation (see fig. 2). Welding time of the frame is 45 minutes with one electric-arc welder. A team of 8 men can wire the mats to the frame and apply the plastic in about three hours. I suggest that welding be done at one site since eight men can easily carry a frame to its permanent site. The construction operation is simple and can be taught in a matter of hours to a community. Dimensions can be adjusted to fit local materials.

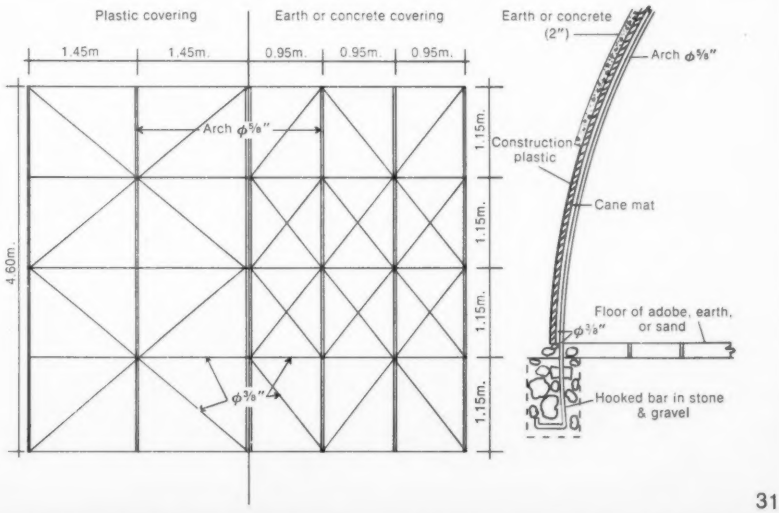
Material list for a 4.60m. x 5.80m. house:

Material	*Quantity*
⅜" re-bar	9
⅝" re-bar	5
Cane Mat (2.00m. x 3.00m.)	8
#16 Steel Wire	2 kg.
Construction Plastic	50 sq. m.
Tar	15 kg.

Steve Bender is an architect assigned to Cooperación Popular (COOPOP), a division of the Peruvian Housing Ministry created in 1964 to assist development of infrastructure in rural areas of that country. Since the May 31 earthquake, COOPOP has been responsible for the provision of emergency shelter to the stricken rural areas of Peru.

Steve, who recently extended for a third year, is a native of Alexandria, Ind., and a graduate of Notre Dame, where he majored in architecture.

His design has not yet been adopted for reconstruction purposes, reports Volunteer correspondent Lucy Conger, but Volunteers have built model camps of the houses in the towns of Chimbote and Huaraz, and these are being used by COOPOP personnel working in the region. A photo of the construction of house appears on next page.



Volunteer

Please print all information in capital letters on the lines and inside the boxes provided. Place only one letter or digit in a box. Leave a blank box between words. Abbreviate as necessary.

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